

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-11. (cancelled)

12. (currently amended) A hearing aid for improving the hearing ability of a user, comprising:

an array of microphones, each producing a respective microphone output signal;

each left and right summing structures, each receiving as inputs a subset of the microphone output signals, being constructed so as to generate left and right array output signals, respectively; and

left and right transmissions paths, each carrying a corresponding one of the left and right array output signals to a corresponding ear of the user;

wherein each of the left and right summing structures acts on a corresponding said subset of microphone output signals so that the different left and right array output signals correspond respectively to two distinct main sensitivity directions that are associated with two distinct main sensitivity lobes and lie at an angle to one another, which angle deviates from 0°.

13. (currently amended) The hearing aid according to claim 12, wherein at least part of the array is mounted on at least one of a front and one or two temples of a pair of spectacles.

14. (currently amended) The hearing aid according to claim ~~[[12]]~~ 13, ~~wherein at least part of the array is mounted on an arm of a pair of spectacles~~ each of said two distinct main sensitivity directions being at an angle, which deviates from 0°, to said temples.

15. (currently amended) The hearing aid according to claim 14, wherein each said ~~arm~~ temple of the pair of spectacles is provided with those of the array of microphones that produce a respective one of the subsets of the microphone output signals.

16. (previously presented) The hearing aid according to claim 12, wherein each of the left and right summing structures comprises a summing device, the summing device receiving as inputs weighted versions of the microphone output signals produced by corresponding weighting factor devices.

17. (currently amended) The hearing aid according to claim 12, wherein ~~[[the]]~~ each of the left and right summing structures comprises a series circuit of weighting factor device and summing device pairs;

wherein in each said pair, the summing device receives, as a first input, an output of the corresponding weighting factor

device, and the summing device receives, as a second input, a respective one of the microphone output signals;

in each but a first of the pairs an input of the weighting factor device is provided by an output of a preceding one of the summing devices in the series circuit, and in the first of the pairs the input of the weighting factor device is provided by the microphone output signal of an outermost one of the microphones; and

an output of the summing device of a last of the series circuit pairs provides a respective one of the left and right array output signals.

18. (previously presented) The hearing aid according to claim 17, wherein the array output signal is derived via a further weighting factor device.

19. (previously presented) The hearing aid according to claim 16, wherein the weighting factor device comprises a delay device.

20. (previously presented) The hearing aid according to claim 19, wherein the weighting factor device comprises an amplitude-adjustment device.

21. (previously presented) The hearing aid according to claim 16, wherein the weighting factor device comprises a phase-adjustment device.

22. (previously presented) The hearing aid according to claim 21, wherein the weighting factor device further comprises an amplitude-adjustment device.

23. (previously presented) The hearing aid according to claim 17, wherein the weighting factor device comprises a delay device.

24. (previously presented) The hearing aid according to claim 18, wherein the weighting factor device comprises a delay device.

25. (previously presented) The hearing aid according to claim 17, wherein the weighting factor device comprises a phase-adjustment device.

26. (previously presented) The hearing aid according to claim 18, wherein the weighting factor device comprises a phase-adjustment device.

27. (previously presented) The hearing aid of claim 12, wherein each of the left and right summing structures operates in a frequency-independent manner so that each of the main sensitivity directions is frequency-independent.

28. (previously presented) The hearing aid of claim 12, wherein each of the main sensitivity directions also lies at an angle to a main axis of the array.

29. (previously presented) The hearing aid of claim 12, wherein at least one of the microphones is omnidirectional.

30. (previously presented) The hearing aid of claim 12, wherein each of the microphones is omnidirectional.

31. (previously presented) The hearing aid of claim 27, wherein each of the microphones is omnidirectional.

32. (currently amended) The hearing aid according to claim 31, wherein at least part of the array is mounted on ~~an arm~~ a temple of a pair of spectacles and said two main distinct sensitivity directions being at an angle, which deviates from 0°, to said temple.

33. (currently amended) The hearing aid according to claim 32, wherein ~~each said arm of the~~ said spectacles have two temples and each of said temples is provided with those of the array of microphones that produce a respective one of the subsets of the microphone output signals.

34. (currently amended) A hearing aid for improving the hearing ability of a user, comprising:

an array of microphones, each producing a respective microphone output signal;

means for converting a first subset of the microphone output signals to a left array output signal;

means for converting a second subset of the microphone output signals to a right array output signal;

left and right transmissions paths, each carrying a corresponding one of the left and right array output signals to a corresponding ear of the user;

wherein each means for converting acts on a corresponding said subset of microphone output signals so that the different left and right array output signals correspond respectively to two distinct main sensitivity directions that are associated with two distinct main sensitivity lobes and lie at an angle to one another, which angle deviates from 0°.

35. (previously presented) The hearing aid of claim 34, wherein at least one of the microphones is omnidirectional.

36. (previously presented) The hearing aid of claim 34, wherein each of the microphones is omnidirectional.

37. (previously presented) The hearing aid of claim 34, wherein each of the main sensitivity directions also lies at an angle to a main axis of the array.

38. (previously presented) The hearing aid of claim 34, wherein each means for converting operates in a frequency-independent manner so that each of the main sensitivity directions is frequency-independent.

39. (previously presented) The hearing aid of claim 38, wherein each of the microphones is omnidirectional.

40. (currently amended) The hearing aid according to claim 39, wherein at least part of the array is mounted on ~~an arm~~ a temple of a pair of spectacles and said two main distinct sensitivity directions being at an angle, which deviates from 0°, to said temple.

41. (currently amended) The hearing aid according to claim 40, wherein ~~each said arm of the~~ said spectacles have two temples and each of said temples is provided with those of the array of microphones that produce a respective one of the subsets of the microphone output signals.

42. (previously presented) The hearing aid according to claim 34, wherein at least part of the array is mounted on a front of a pair of spectacles.

43. (currently amended) The hearing aid according to claim 34, wherein at least part of the array is mounted on ~~an arm~~ a temple of a pair of spectacles and said two main distinct sensitivity directions being at an angle, which deviates from 0°, to said temple.

44. (currently amended) The hearing aid according to claim 43, wherein ~~each said arm of the~~ said spectacles have two temples and each of said temples is provided with those of the array of microphones that produce a respective one of the subsets of the microphone output signals.

45. (currently amended) A hearing aid for improving the hearing ability of a user, comprising:

an array of microphones, each producing a respective microphone output signal;

left and right summing structures, each receiving as inputs a subset of the microphone output signals, each being constructed so as to generate left and right array output signals,

respectively;

left and right transmissions paths, each carrying a corresponding one of the left and right array output signals to a corresponding ear of the user;

wherein each of the left and right summing structures acts on its subset of microphone output signals so that the different left and right array output signals correspond respectively to two distinct main sensitivity directions that are associated with two distinct main sensitivity lobes and lie at an angle to one another, which angle deviates from 0°; and

wherein each of the left and right summing structures operates so that the array output signals include low, mid, and high audio frequency components.

46. (previously presented) The hearing aid of claim 45, wherein at least one of the microphones is omnidirectional.

47. (previously presented) The hearing aid of claim 45, wherein each of the microphones is omnidirectional.

48. (previously presented) The hearing aid of claim 45, wherein each of the main sensitivity directions also lies at an angle to a main axis of the array.

49. (previously presented) The hearing aid of 45, wherein the mid-frequency components include signals having a frequency of 2000 Hz.



50. (previously presented) The hearing aid of 49, wherein the high-frequency components include signals having a frequency of 4000 Hz.

51. (previously presented) The hearing aid of 50, wherein the low-frequency components include signals having a frequency of 500 Hz.

52. (previously presented) The hearing aid of claim 51, wherein each of the microphones is omnidirectional.

53. (currently amended) The hearing aid according to claim 52, wherein at least part of the array is mounted on ~~an arm~~ a temple of a pair of spectacles and said two main distinct sensitivity directions being at an angle, which deviates from 0°, to said temple.

54. (currently amended) The hearing aid according to claim 53, wherein ~~each said arm of the~~ said spectacles have two temples and each of said temples is provided with those of the array of microphones that produce a respective one of the subsets of the microphone output signals.

55. (previously presented) The hearing aid according to claim 45, wherein at least part of the array is mounted on a front of a pair of spectacles.

56. (currently amended) The hearing aid according to claim 45, wherein at least part of the array is mounted on ~~an arm~~ a temple of a pair of spectacles and said two main distinct

sensitivity directions being at an angle, which deviates from 0°,  
to said temple.

57. (currently amended) The hearing aid according to claim 56, wherein ~~each said arm of the~~ said spectacles have two temples and each of said temples is provided with those of the array of microphones that produce a respective one of the subsets of the microphone output signals.

58. (currently amended) A hearing aid for improving the hearing ability of a user, comprising:

an array of microphones, each producing a respective microphone output signal;

means for converting a first subset of the microphone output signals to a left array output signal that corresponds to a first main sensitivity direction that is associated with a first main sensitivity lobe;

means for converting a second subset of the microphone output signals to a right array output signal that corresponds to a second main sensitivity direction that is associated with a second main sensitivity lobe and lies at an angle to the first main sensitivity direction, which angle deviates from 0°; and

left and right transmissions paths, each carrying a corresponding one of the different left and right array output signals to a corresponding ear of the user;

wherein each means for converting operates so that the array output signals include low, mid, and high audio frequency components.

59. (previously presented) The hearing aid of claim 58, wherein at least one of the microphones is omnidirectional.

60. (previously presented) The hearing aid of claim 58, wherein each of the microphones is omnidirectional.

61. (previously presented) The hearing aid of claim 58, wherein each of the main sensitivity directions also lie at an angle to a main axis of the array.

62. (previously presented) The hearing aid of 58, wherein the mid-frequency components include signals having a frequency of 2000 Hz.

63. (previously presented) The hearing aid of 62, wherein the high-frequency components include signals having a frequency of 4000 Hz.

64. (previously presented) The hearing aid of 63, wherein the low-frequency components include signals having a frequency of 500 Hz.

65. (previously presented) The hearing aid of claim 64, wherein each of the microphones is omnidirectional.

66. (currently amended) The hearing aid according to claim 65, wherein at least part of the array is mounted on ~~an arm~~ a temple of a pair of spectacles and said two main distinct

sensitivity directions being at an angle, which deviates from 0°,  
to said temple.

67. (currently amended) The hearing aid according to claim 66, wherein ~~each said arm of the~~ said spectacles have two temples and each of said temples is provided with those of the array of microphones that produce a respective one of the subsets of the microphone output signals.

68. (previously presented) The hearing aid according to claim 58, wherein at least part of the array is mounted on a front of a pair of spectacles.

69. (currently amended) The hearing aid according to claim 58, wherein at least part of the array is mounted on ~~an arm~~ a temple of a pair of spectacles and said two main distinct sensitivity directions being at an angle, which deviates from 0°,  
to said temple.

70. (currently amended) The hearing aid according to claim 69, wherein ~~each said arm of the~~ said spectacles have two temples and each of said temples is provided with those of the array of microphones that produce a respective one of the subsets of the microphone output signals.